



# Ecological Land Management

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Fermilab

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Nature and Ecology

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Interact

Fermilab is a mosaic of land uses and habitats ranging from agriculture and office buildings to buttonbush swamps and bur oak savannas. We treasure the natural areas interwoven into the 6,800-acre site.

About Fermilab's Ecology

Fermilab has a long and proud history of land management based on ecological science and stewardship values that enhance the environment.

Conservation

Conservation work at Fermilab supports global initiatives such as climate change adaptation and enhancement of biodiversity and ecosystem services.

Habitat Communities

The land within the boundaries of Fermilab is a microcosm of many ecosystems and land uses found in the Midwest.

Wildlife Conservation

From ospreys and green snakes to bats and bumblebees, Fermilab has a role to play in wildlife conservation and management. Adaptive management for species of conservation concern is necessary and valued at Fermilab.

Volunteer and Recreation

Thanks to the dedicated efforts of people both in and outside the lab, Fermilab is a 6,800-acre ecological jewel that is enjoyed by employees and neighbors. Come on out for a visit or join us during a volunteer day!

<http://ecology.fnal.gov/>



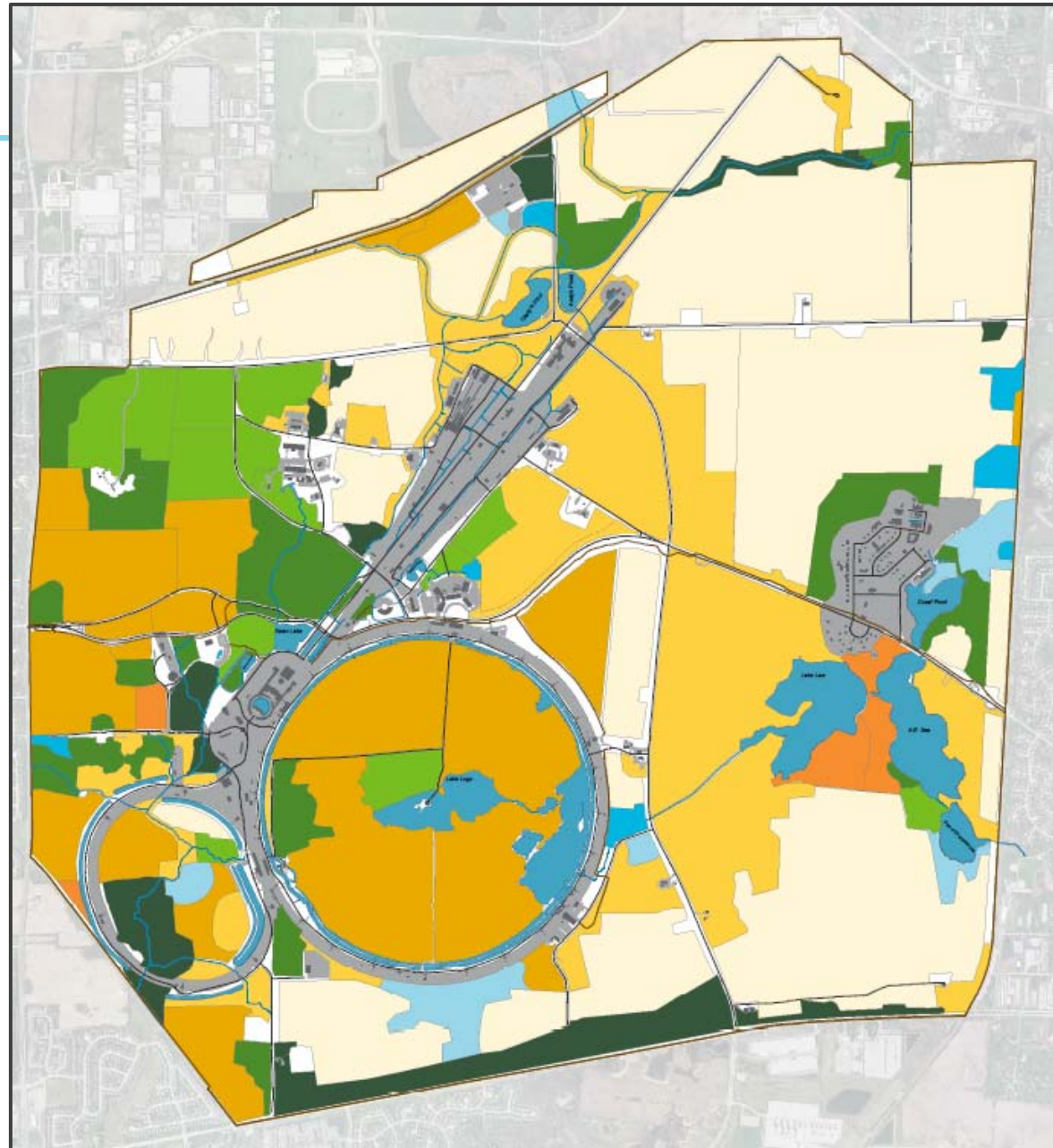
**Prairie**

**Woodland**

**Savanna**

**Shrubland**

**Grassland**



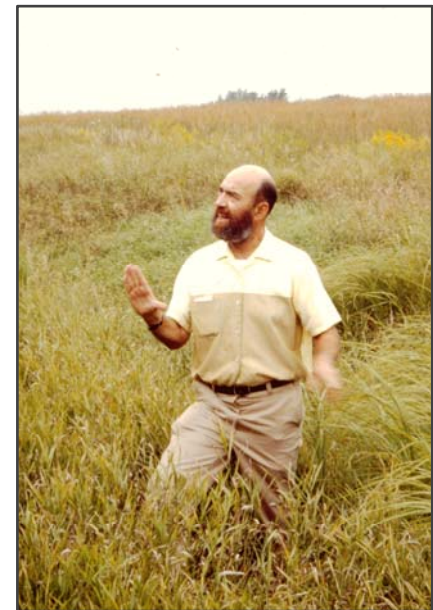
## Dr. Robert F. Betz and the tallgrass prairie

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- 1960s
  - Prairie remnant explorer
    - Railroad rights-of-way
    - Pioneer cemeteries (Betz and Lamp 1989, 1990)
- Betz found a desire to create a large-scale, tallgrass prairie on silt-loam soil

1972

- National Accelerator Lab in Batavia, Illinois
  - “After a number of discussions involving a series of proposals over a period of a year and a half, it was agreed that a prairie restoration project could be undertaken on land within the accelerator ring.”



## Turning vision into reality

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1974

- Volunteer seed collection, 70 spp., within 50 mile radius
- 4-month, cold moist storage, land plowed w/ multiple diskings
- Planted 400 lb. mix in June 1975 on 9.6 acres- Nisbet drill





# Fermilab Roads & Grounds does the heavy lifting

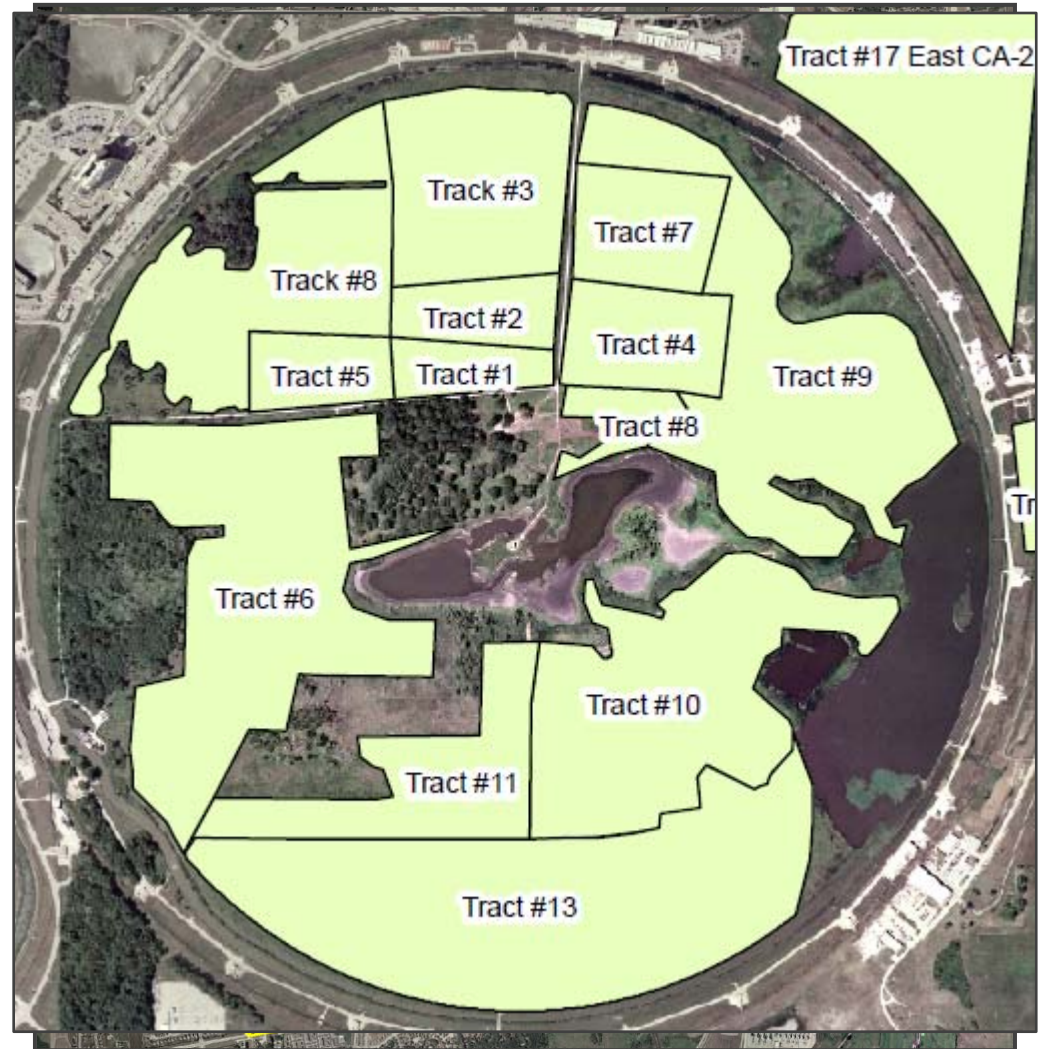






## The planting continued and the prairies grew

PRAIRIE PLOT #	ACRES	PLANTED
1	9	Spring 1975
2	11	Spring 1976
3	29	Spring 1977
4	16	Fall 1977
5	11	Fall 1978
6	60	Fall 1979
7	17	Spring 1981
8	46	Fall 1981
9	56	Fall 1982
10	53	Spring 1983
11	32	Spring 1984
12	33	Spring 1984









# Fermilab Roads & Grounds





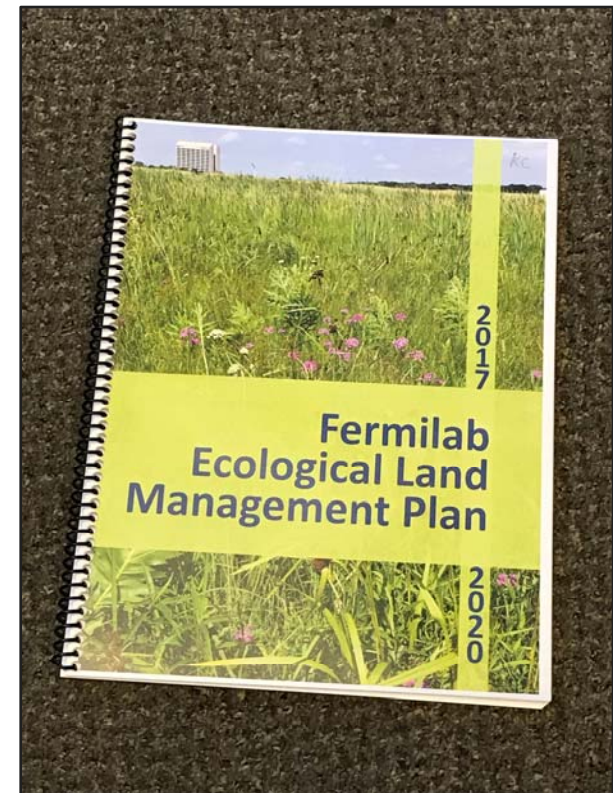
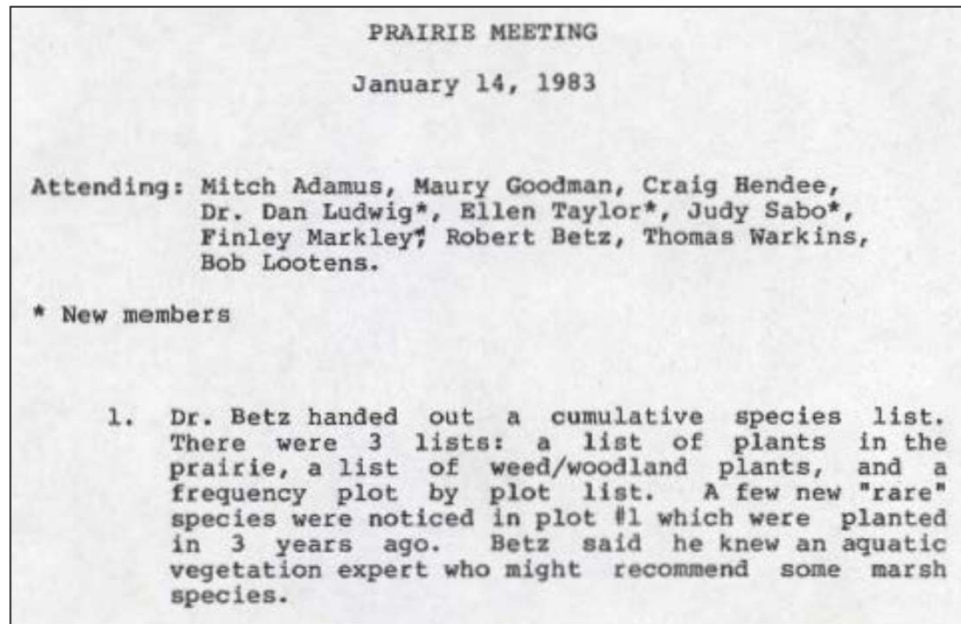
## Results after 40 years of prairie restoration at Fermilab

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## Current Ecology Program

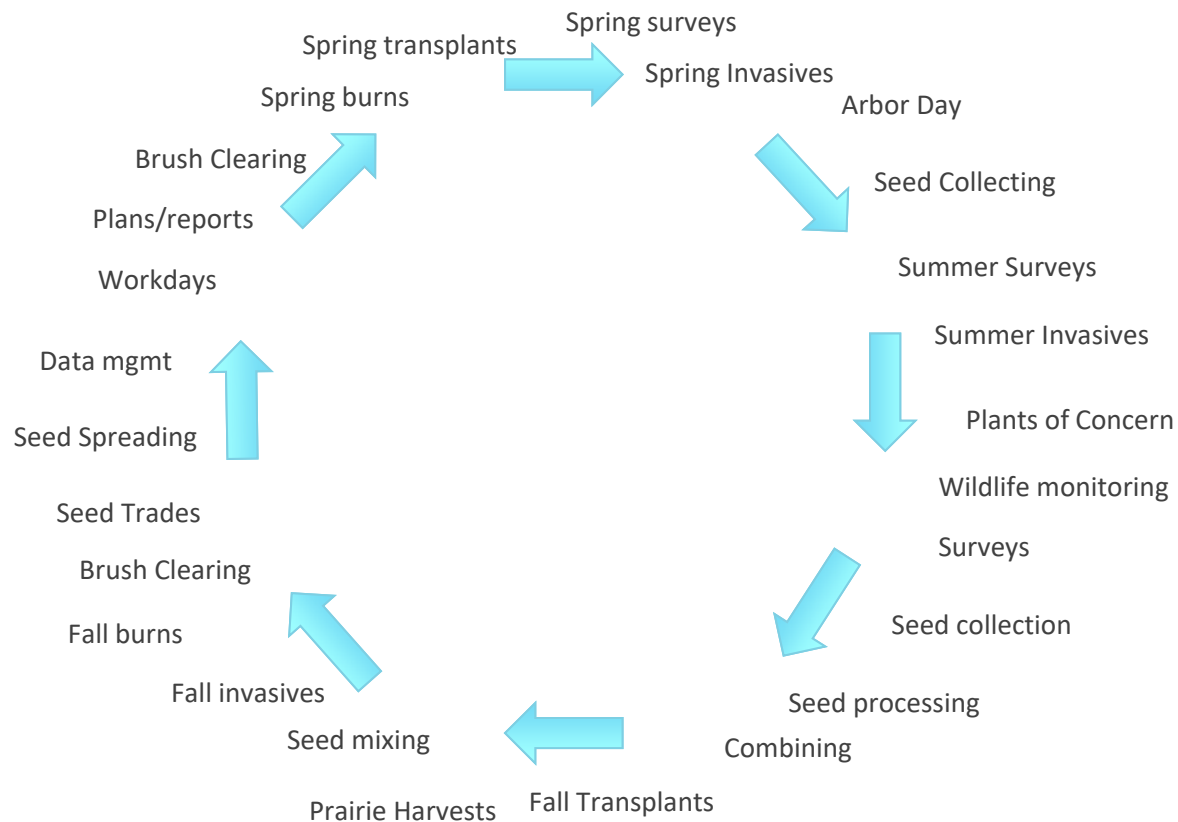
- Ecological Land Management Committee meets monthly and helps guide restoration activities on-site.





# The Calendar

- **Growing Season** (April thru October) = Outdoors (90%)
  - running from place to place
- **Dormant Season** (November thru March) = Indoors (60%)
  - “Catch up”, data entry, GIS map updates, planning/reporting



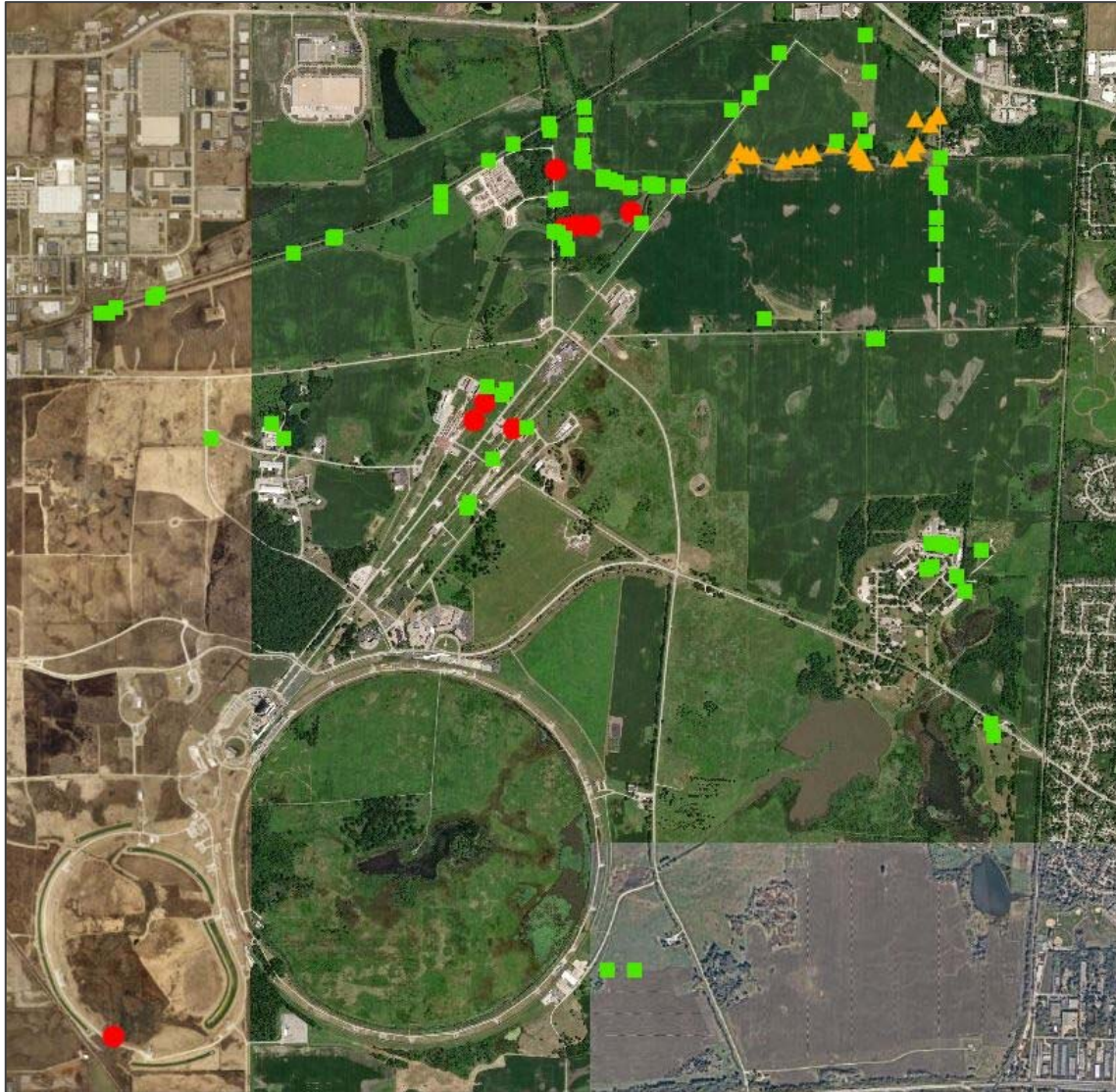
## Invasive Species Management at Fermilab

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- teasel
- purple Loosestrife
- *Phragmites*
- oriental bittersweet
- bush honeysuckle
- common buckthorn
- Japanese barberry
- autumn olive
- European highbush cranberry
- burning bush
- coralberry
- garlic mustard
- white sweet clover
- reed canary grass
- crown vetch
- bird's foot trefoil
- poison hemlock
- spotted knapweed
- wild chervil
- glossy buckthorn
- Callery pear
- Japanese knotweed
- Japanese hedge parsley
- mugwort



# ArcGIS – poison hemlock





## Using hemi-parasitic plants

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- Wood betony established in 21 plantings
- Bastard toadflax established in 9 plantings

- ▶ Increase patchiness naturally





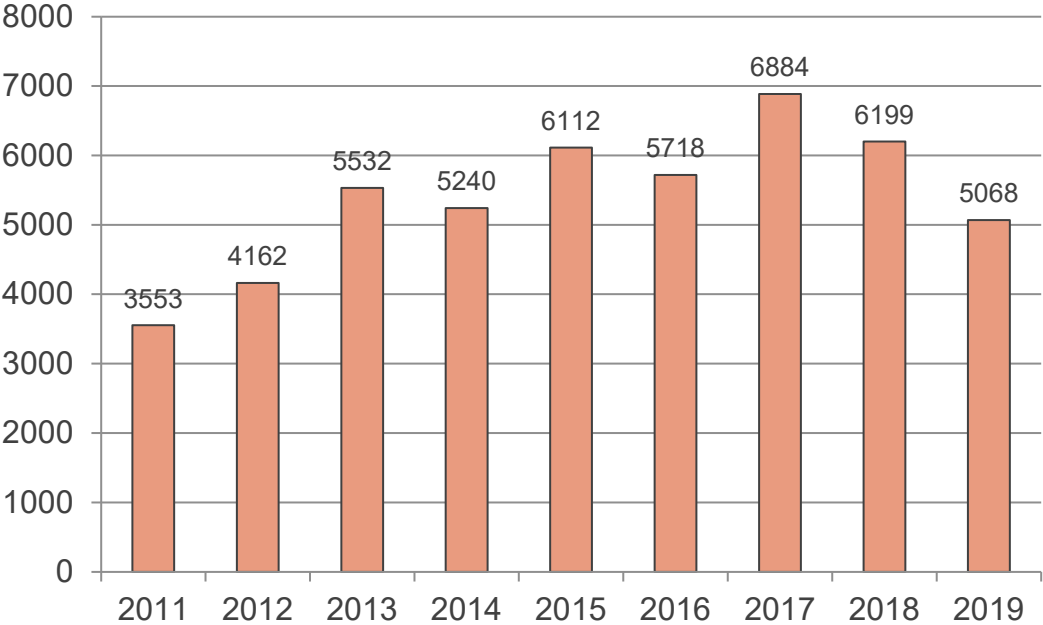
# Fermilab Volunteer Program

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- Stewards
- Wildlife Monitors
- Plants of Concern
- Workday Volunteers
- Annual Seed Harvests
- Provide Interns
- Obtain Grants

# Fermilab Natural Areas



2019 Volunteer Hours



■ Stewardship ■ Seed Harvests ■ Monitoring ■ BOD and Committees ■ Misc.

# Chicago Wilderness Award



The natural areas of the Chicago Wilderness region are home to a wide diversity of life and rare habitats — prairies, wetlands, woodlands, savannas, and more. Thousands of native plant and animal species live here among the more than 10 million people who also call the region home.

**Chicago Wilderness 2019**  
Excellence in Ecological Restoration  
**Platinum Accreditation**

— AWARDED TO —  
**Fermilab**  
**US Department of Energy**

For conservation leadership and exemplary use of best management practices in natural resource restoration.



Sponsor of the 2016 Chicago Wilderness Excellence in Ecological Restoration Program



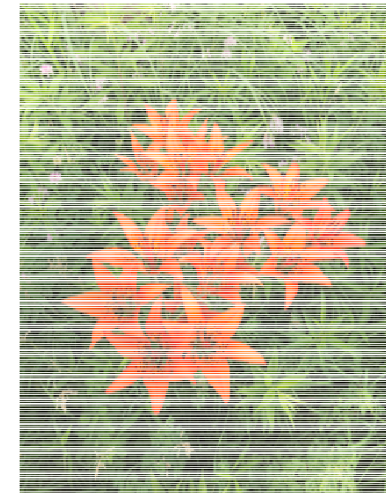










Photo credit: Penny Kasper





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# Questions?

